UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/649,713	08/25/2000	Harry T. French	FRENCH 6-2	7110

27964	7590	02/02/2004

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EXAMINER
HAN, CLEMENCE S

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 02/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/649,713	FRENCH ET AL.
	Examiner	Art Unit
	Clemence Han	2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4)☐ Interview Summary (PTO-413) Paper No(s). _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claim 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leger (US

Patent 5,732,286) in view of Rajaraman (US Patent 5,802,310).

In regarding to claim 1 and 10, Leger teaches a packet transport system having a master

device 101, 102 that transmits packets to a slave device 103, comprising: a channel level

detector 207 that reads a level of a first-in, first-out (FIFO) buffer 208 of said slave device

(Column 8 Line 4-5) and compares said level to a threshold (Column 8 Line 9-12); and an event

driven message generator 207 that issues an event driven message when said level reaches said

threshold (Column 7 Line 8-10). Even though Leger teaches that the direction of the data flow

could be both ways (Column 5 Line 39-44), Leger, however, discloses in detail about the

receiving direction. Rajaraman teaches about the transmitting direction (Figure 5). It would

have been obvious to one skilled in the art to modify Leger to be applied in the transmitting

direction as taught by Rajaraman in order to use the transmit buffer 401 more efficiently.

In regarding to claim 2 and 11, Leger teaches the event driven message transmitted in

band (Column 10 Line 15-17).

In regarding to claim 3 and 12, Leger teaches the event driven message transmitted out of band (Column 10 Line 15-17).

In regarding to claim 4 and 13, Leger teaches a local interface 104 between said master device 101, 102 and said slave device 103. Leger also teaches sending said event driven message to the transmitting device (Column 7 Line 28-30).

In regarding to claim 5 and 14, Leger teaches said threshold as user selectable (Column 8 Line 8-9).

In regarding to claim 6 and 15, Leger teaches said level indicates a number of packets remaining in said FIFO buffer (Column 8 Line 4-5), said event driven message indicating to said master device as to when said FIFO buffer may underrun (Column 3 Line 48-51).

In regarding to claim 7 and 16, Leger teaches master device transmits additional packets to said slave device based on said event driven message (Column 3 Line 48-51).

In regarding to claim 8 and 17, Leger teaches said level indicates a number of packets remaining in said FIFO buffer (Column 8 Line 4-5), said event driven message indicating to said master device as to when said FIFO buffer may overrun (Column 3 Line 43-46).

In regarding to claim 9 and 18, Leger teaches master device suspends transmission of packets to said slave device based on said event driven message (Column 3 Line 43-46).

3.   Claim 19-22, 25-29, 32-38 and 41-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leger in view of Rajaraman and further in view of Bell, Jr. et al. (US Patent 6,601,105).

In regarding to claim 19 and 26, Leger in view of Rajaraman teaches a packet transport system having a master device that transmits packets to a slave device, a messaging system for facilitating communications between said master device and said slave device as discussed in the rejection of claim 1. Leger in view of Rajaraman, however, does not teach an aggregate level detector that determines storage levels of a plurality of channels associated with said slave device and a periodic message generator that periodically issues to said master device a periodic message indicating said storage levels. Bell, Jr. teaches an aggregate level detector 18 that determines storage levels of a plurality of channels associated with said slave device (Column 4 Line 35-38) and a periodic message generator 18 that periodically issues to said master device a periodic message indicating said storage levels (Column 3 Line 66-67). It would have been obvious to one skilled in the art to modify Leger in view of Rajaraman to have an aggregate level detector and periodic message generator as taught by Bell, Jr. in order to use plurality of buffers more efficiently.

In regarding to claim 20 and 27, Leger teaches the event driven message transmitted in band (Column 10 Line 15-17).

In regarding to claim 21 and 28, Leger teaches the event driven message transmitted out of band (Column 10 Line 15-17).

In regarding to claim 22 and 29, Leger teaches a local interface 104 between said master device 101, 102 and said slave device 103. Leger also teaches sending said event driven message to the transmitting device (Column 7 Line 28-30).

In regarding to claim 25 and 32, Leger teaches master device transmits additional packets to said slave device based on said event driven message (Column 3 Line 48-51).

In regarding to claim 33 and 41, Leger in view of Rajaraman teaches a packet transport system having a master device 101, 102 that transmits packets to a slave device 103, a messaging system for facilitating communications between said master device and said slave device, comprising: an event driven messaging subsystem, including: a channel level detector 207 that reads a level of a firstin, first-out (FIFO) buffer 208 of said slave device and compares said level to a threshold, and an event driven message generator that issues an event driven message to said master device when said level reaches said threshold. Leger in view of Rajaraman, however, does not teach an aggregate level detector that determines storage levels of a plurality of channels associated with said slave device and a periodic message generator that periodically issues to said master device a periodic message indicating said storage levels. Bell, Jr. teaches an aggregate level detector 18 that determines storage levels of a plurality of channels associated with said slave device (Column 4 Line 35-38) and a periodic message generator 18 that periodically issues to said master device a periodic message indicating said storage levels (Column 3 Line 66-67). It would have been obvious to one skilled in the art to modify Leger in view of Rajaraman to have an aggregate level detector and periodic message generator as taught by Bell, Jr. in order to use plurality of buffers more efficiently. Furthermore, Leger in view of Rajaraman teaches1 said master device controlling transmission of packets to said slave device based on said event driven message (Column 3 Line 43-46).

In regarding to claim 34, 42 and 43, Leger teaches the event driven message transmitted in band (Column 10 Line 15-17).

In regarding to claim 35, 44 and 45, Leger teaches the event driven message transmitted out of band (Column 10 Line 15-17).

In regarding to claim 36 and 46, Leger teaches a local interface 104 between said master device 101, 102 and said slave device 103. Leger also teaches sending said event driven message to the transmitting device (Column 7 Line 28-30).

In regarding to claim 37 and 47, Leger teaches master device transmits additional packets to said slave device based on said event driven message (Column 3 Line 48-51).

In regarding to claim 38 and 48, Leger teaches master device suspends transmission of packets to said slave device based on said event driven message (Column 3 Line 43-46).

4.   Claim 23, 30, 39 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leger in view of Rajaraman and Bell, Jr. et al and further in view of Sidhu et al. (US Patent 6,366,959). Bell, Jr. teaches a periodic message generator 18 that periodically issues to said master device a periodic message indicating said storage levels (Column 3 Line 66-67). Bell, Jr., however, does not teach said periodic message is contained in a single packet. Sidhu teaches a feedback contained in a single packet 178. It would have been obvious to one skilled in the art to modify Leger in view of Rajaraman and Bell, Jr. to use a single packet feedback as taught by Sidhu in order to relay the states of buffers more efficiently.

5.   `Claim 24, 31, 40 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Leger in view of Rajaraman and Bell, Jr. et al and further in view of Hamburger et al. (US

Patent 3,586,771). Bell, Jr. teaches a periodic message generator 18 that periodically issues to

said master device a periodic message indicating said storage levels (Column 3 Line 66-67).

Bell, Jr., however, does not teach s said periodic message enables said master device to

determine a variation between a first clock associated with said slave device and a second clock

associated with said master device. Hamburger teaches using a periodic message to enable said

master device to determine a variation between a first clock associated with said slave device

and a second clock associated with said master device (Column 1 Line 41-50). It would have

been obvious to one skilled in the art to modify Leger in view of Rajaraman and Bell, Jr. to use

the periodic message to determine the clock variation between master and slave as taught by

Hamburger in order to synchronize the master and slave clocks.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

      The following patents are cited to further show the state of the art with respect to the

packet transport.

      U.S. Patent 5,737,313 to Kolarov et al.

      U.S. Patent 6,490,271 to Erjanne

   'U.S. Patent 6,222,825 to Mangin et al.

   U.S. Patent 5,541,926 to Saito et al.

   U.S. Patent 6,581,164 to Felts, III et al.

   U.S. Patent 5,717,855 to Norman et al.

   U.S. Patent 6,016,513 to Lowe

   U.S. Patent 6,578,101 to Ahern

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Clemence Han whose telephone number is (703) 305-0372. The

examiner can normally be reached on Monday-Friday 8 to 5.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9314.

   Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 306-0377.

                                   Clemence Han
                                   Examiner
                                   Art Unit 2665